

Department of Agriculture Medical Protocols Hearing Conservation Program

I. Purpose

- A. To insure employees do not suffer hearing loss due to exposure of excessive noise levels.
- B. To insure compliance with OSHA Standard 29CFR 1910.95.

II. Introduction

The Hearing Conservation Program of the Department of Agriculture includes all employees exposed to noise levels at or above 85dB over an 8-hour time weighted average (50% daily noise dose). Area and personal noise monitoring performed under the supervision of the department safety director shall determine which employees are subject to the hearing conservation program.

III. Audiometric Testing Program

- A. Baseline Audiograms** – A valid baseline audiogram shall be established for each employee exposed to noise at or above 50% daily noise dose (DND) against which subsequent audiograms can be compared. This baseline can be obtained by:
 - 1. Testing to be preceded by **14 hours** without exposure to workplace noise. The employee should also be advised to avoid high levels of non-occupational noise exposure for the 14 hours preceding the test.
- OR**
- 2. A preplacement audiogram to be done before hiring or assignment to a job at which employee exposure has been identified to be at or above 50% DND.
- OR**
- 3. Obtained within 6 months of an employee's first exposure at or above the 50% DND.
- B. Annual Audiograms** – All employees who are exposed to noise exposure equal to or above 50% DND must have an annual audiogram. Testing may be conducted anytime during the work day. When testing is done during work hours, the results may reflect a Temporary Threshold Shift (TTS) due to improper use of hearing protectors.
- C. Audiogram Record** – The record should include:
 - 1. Name and job classification of the employee (job classification should be obtained from Personnel Division).
 - 2. Date of audiogram
 - 3. Examiners name and certificate number.
 - 4. Date of the last acoustic or exhaustive calibration of the audiometer.
 - 5. The results of the audiometer testing.

D. Standard Threshold Shift - STS

A standard Threshold Shift is a change in the current hearing threshold, relative to the baseline audiogram of an average of 10dB or more at 2000, 3000, and 4000Hz in either ear, after age adjustment.

1. If the audiogram shows that an employee has suffered an STS, obtain a retest within **30 days**, and consider the results as the annual audiogram.
2. The employee must be away from noise **at least 14 hours** before retest.
3. If the employee wears hearing protectors, have him/her bring them along at the time of retest.
4. The proper use and insertion of hearing protectors is the responsibility of the employee's supervisor.

E. Follow-up procedures for employees with STS

1. An employee must be informed in writing within 21 days after an STS has been confirmed.
2. A copy of notification must be sent to the department safety director which is his notification to reassess the noise exposure of the employee.
3. An employee with an exposure of 50% DND or above and not using hearing protection shall be fitted with hearing protectors, trained in their use and care and **required** to use them.

F. Follow-up Procedures Other than STS

The results should be reviewed with the Department physician. If the physician sees no further follow-up is required, or the problem has been previously identified, a note to that effect should be made and filed with the chart.

G. Revised Baselines

The baseline audiograms may be revised if an STS is persistent or an annual audiogram indicates a significant improvement over the baseline.

H. Evaluation of the Audiogram

1. Each employee's annual audiogram, after age adjustment, shall be compared to the baseline audiogram to determine if the audiogram is valid and if a Standard Threshold Shift has occurred.
2. The person evaluating the audiogram (audiologist, otolaryngologist or physician) shall have on hand the following:
 - a. Copy of the OSHA Standard for employees exposed to noise at or above 85dB/8hr. TWA.
 - b. Baseline and most recent audiogram.
 - c. Measurement of background sound pressure levels in the audiometric test room.
 - d. Calibration records of the audiometer.

I. Procedure for Evaluating Employee Audiograms

1. Ensure the evaluating audiologist has a copy of the employee's baseline audiogram.
2. A standard threshold shift is defined as a change of hearing relative to the baseline audiogram an average of 10dB or more at 2000, 3000, and 4000 Hz. In other words, if the difference between the baseline audiogram and the current audiogram for those 3 frequencies is 30dB or more, it is a threshold shift. Note: Ask the technician who wrote the results to correct the reading for age, if the technician has not done so.
3. If a standard threshold shift occurs, notify the employee within 21 calendar days of its occurrence. Have the employee retested within 21 calendar days of the initial test. The employee must not be exposed to noise above 85dB 14 hours before the retest. Inform the employee of the retest results within 21 calendar days. Both notifications shall be in writing. If the second test does not demonstrate a standard threshold shift, the second test will serve as the annual audiogram.
4. When to record the standard threshold shift on the OSHA 300 log: Any employee with a standard threshold shift and at least a 25dB shift from audiometric zero is to be entered on the OSHA 300 log. In other words, if the measurements of hearing levels add up to 75 or more in the 2000, 3000 and 4000 Hz frequencies in either ear, and a standard threshold shift occurs, it is an OSHA recordable incident. No correction of age is allowed for this criterion.

J. Record Retention

Audiograms are considered medical records and should be retained in accordance with the OSHA Standard 29 CFR 1910.20 (see Employee Medical Records Access Protocol).

K. Audiometric Test Requirements

1. Audiometric tests shall be performed by a licensed or certified audiologist, otolaryngologist or other physician, or by a technician who is certified by the Council of Accreditation in Occupational Hearing Conservation. A technician who operates microprocessor audiometers does not need to be certified. A technician who performs audiometric tests must be responsible to an audiologist, otolaryngologist or physician.
2. Otoscopic examination of both ears must be done before an audiometric test is performed.
3. Audiometric tests shall be a pure tone, air conduction, hearing threshold test, with test frequencies including a minimum 500, 1000, 2000, 3000, 4000 6000 Hz. Tests at each frequency shall be taken separately for each ear.
4. Audiometric tests shall be conducted with equipment that meets the specification of and is maintained and used in accordance with, ANSI for Audiometers S 3.6-1969.
5. Pulse-tone and self recording audiometers must meet specified requirements set in the OSHA Standard 1910.95, Appendix C.
6. Audiometric examination shall be administered in a room meeting the requirements listed in OSHA 1910.25, Appendix D.

L. Audiometer Calibration

1. The functional operation of the audiometer shall be checked before each day's use by an electro ear or testing person with known stable hearing threshold, and by listening to the audiometer's output to make sure the audiometer is free from unwanted sound. Deviation of more than 10dB shall require acoustic calibration.
2. Audiometer shall be checked **acoustically** at least **annually** in accordance with Appendix E, Acoustic Calibration of Audiometer in OSHA 1910.25. Deviations of 15dB or more necessitate an exhaustive calibration.
3. An **exhaustive** calibration shall be performed every **2 years** in accordance with ANSI S3.6-1969 specified for audiometer section 4.1.2, 4.1.3, 4.1.43, 4.4.1, 4.4.2, 4.4.3, and 4.5. Test frequencies below 500 Hz may be omitted from the check.
4. Audiometric calibration record shall include: type of calibration, date performed and numerical results of acoustic calibration.